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# The Florida Citrus Commission

## ... And Its Work

*Florida Citrus Commission*

BY C. E. STEWART

AT MEETING OF FLORIDA STATE HORTICULTURAL SOCIETY

The subject assigned to me is "The Florida Citrus Commission And Its Work." The Commission and its work might be taken in two ways — one, its record of performance; the other, the job to be done. I might bore you with statistics on past performance, or I might touch lightly upon such points and devote my remarks not to the past but to the future, to the work before us. Perhaps a mixture of both will present the better picture.

Everyone knows that the state citrus laws, under which the Commission operates, were enacted by the last Legislature, but few people know what caused the sudden demand upon the part of the industry for these regulatory measures. Many theories have been advanced and I am sure that all of them have some foundation in fact, for they are good reasons as to why the industry was brought together. But most people seem to overlook the spark which was hot enough to weld the various interests of the industry into a unit of sufficient force to bring about the enactment of the present citrus laws. That spark was a fight, a fight within the industry that dragged through

a whole season.

I am a man of peace myself, but for once I must confess that some good came from a fight started by selfishness and jealousy, as all fights are. For many years many attempts had been made to establish a more uniform and less competitive system of marketing. The Florida Citrus Exchange, the Fruitman's Club, the Clearing House and several other organizations were efforts at stabilization, and each failed to achieve that goal for the industry because of a selfish, uncontrolled element. When the AAA, under the new deal, offered control of shipments from the grading of the fruit through to the markets, under an interstate commerce setup, an opportunity seemed to be at hand to control by federal law those who would not cooperate in matters affecting the welfare of the industry. A marketing agreement was drafted which was satisfactory to the required percentage of growers and shippers, and the Secretary of Agriculture appointed a control committee for the 1933-34 season which worked to the great advantage of growers that season. But as interests were thrown together which had always been suspicious of each

other, considerable friction developed before the end of the season. A real row was averted only by the abrogation of the agreement.

Immediately a movement was started to get a new agreement for the 1934-35 season, an agreement that was to correct the evils of the first one. I am not going into all of that. Suffice to say a control committee was appointed under the second agreement which was factional from the start. It spent the entire season, a season complicated by a freeze, playing politics, petty politics, with Washington sitting as a judge and dealing out one reprimand after another. Each faction on the committee was dissatisfied — each faction suffered from frustration, and frustration, my friends, is the greatest little stirrer-upper in itself that one can imagine. They chafed under the arbitrary exercise of authority by Washington. They wanted to fight in their own way. So it was natural that soon the question ran from mouth to mouth: "Why can't we have our own citrus laws?" And even after we decided to seek these state laws, it was a long pull. Fortunately talent was called in that

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# The Plight Of Grapefruit

ADDRESS GIVEN BY W. C. DANIELLS

AT ANNUAL MEETING OF FLORIDA STATE HORTICULTURAL  
SOCIETY IN DELAND

I am asked to talk on "The Plight of Grapefruit". I feel more inclined to talk on the tragedy of the inaction of the Growers which results in "the plight of Grapefruit."

As the native Floridian would say—"It doesn't belong to be this way". There is no reason, excuse or justification for the situation, excepting the entire lack of any intelligent, organized direction of the marketing of the Grapefruit.

Growers, and most Shippers, are centered in the growing and shipping of fruit. True, we have some Receiver or agency handling our fruit in the North. These Receivers were able to handle our fruit and secure a fair price for it at a time when our competitors were not merchandising their products, and when our production was so low that the public consumed our offerings without any effort on our part. This led us to believe that we had a product that the people must have and our only function was to raise it and ship it to market.

Conditions have greatly changed in the last ten years. All successful producers and shippers are now merchandising their products and, as a result, such commodities as Tomato Juice, Pineapple Juice, Prune Juice and many others, that were not known a few years ago, are very successful because of their merchandising methods.

Take Tomato Juice alone: It was barely known seven years ago. The sale has increased by leaps and bounds from nothing to 10,000,000 cases in about seven years.

During this same seven years, Grapefruit consumption has been cut almost in half. In other words, we have just sat down and done nothing relative to merchandising, and we have let them take our candy without any protest.

The trouble with the Grapefruit situation is not, in any way, with the Grapefruit.

Please bear this in mind—the entire Grapefruit trouble lies solely with the Growers and Shippers of this State.

California produces a small, sour, bitter Grapefruit that is not juicy or palatable—but, California had the

good business sense to spend 10c a box in an educational campaign in the States close at home and, as a result California has marketed her Grapefruit at such satisfactory prices, that today the Growers are planting thousands of acres more of this sour, bitter Grapefruit, and they will sell it at very profitable prices.

Compare their achievements with our situation—where we have the best Grapefruit in the world—heavy juice—fine flavor—and everything else that makes up a desirable fruit. We are close to the major markets. We have low freight rates. But, we have done nothing but ship our fruit to these markets and have expected that a satisfactory check would come back without any effort on our part—and after this satisfactory check failed to come back, we still sat, and talked about the depression, people not having money to buy, and many other explanations that have not been at all applicable—excepting to the extent of our "sitting habit".

Please remember that the Tomato Juice industry started during this same depression that we talk about, and through modern merchandising methods has developed a 10,000,000 case a year business, at the same time that Grapefruit consumption has been cut in half—and please further remember that, in a general way, Tomato Juice is not palatable, has practically no food value, there are other objections to it that I will not refer to, and please note that the Tomato Juice Industry also carefully refrains from referring to these objections—but they do use the few qualities that they can profitably talk about, and they use merchandising men who understand how to sell under the present conditions, and believe me, they sell it! And every case they sell reduces the demand for Grapefruit, because people are told that it will provide the same results easier, cheaper, quicker, without any messy extraction or difficulty in eating, and this feature alone has at least been popular with the house-wife, and hotels, restaurants and juice places.

I am not an artist—but after this introduction let me draw you a little picture:

Dr. Kellogg told us two years ago many very important reasons why Grapefruit should be used daily, in quantities. I will quote several of these, briefly:

He stated that a glass of Orange or Grapefruit juice three times a day will do more for the average sick man than all the drugs he can swallow.

"It is the best antidote known for old age and pessimism."

"If Florida can produce oranges enough to supply half a dozen a day to every inhabitant of the United States, the depression would disappear over night."

"We need a quart of citrus juice for every pound of meat that we eat."

"The greatest obstacle to Florida's prosperity is the ignorance of the people of the North respecting their need of the matchless fruits which your sunshine and tropical air produce." How many growers know or practice what Dr. Kellogg has told us?

Not wishing to criticize Dr. Kellogg, but I do want to correct this statement where in he says "the greatest obstacle to Florida's prosperity is the ignorance of the people of the North", etc. I want to say that the people of the North would not be ignorant of these facts for more than a few days, if our own Growers right here in the State were not so darned ignorant of these facts, and then were not so lazy and pessimistic on the question of marketing.

Here we have the greatest product that is known to man, for the correction of many body ailments. We have seen other successful Industries prosper by using intelligent educational campaigns. We have gone along for a period of seven years with low prices in the face of the successes of other industries and yet, we still fail to use merchandising methods, and worse yet, two-thirds of our Growers and Shippers actually do not believe that the job can be done.

Well—all I have got to say is that we are so sound asleep that it doesn't seem possible to wake us out of this lethargy regardless of the shining successes of other people all around us who are using educational methods—and this is our greatest

danger—our refusal to help ourselves and our refusal to believe that it can be done.

In many ways I can understand this. Our Growers and Shippers are not merchandising people, though some of them think they are. They just produce their fruit and ship it. But this body of people should know that a commission man, a retail man, does not to any degree spend his time and money in educating the public to use our product, or any other product. This demand must be created by the producer, so that the commission man and retail man can simply hand out as hurriedly as possible the article that is called for by the public, and if we do not create this demand our Industry is permanently gone, and we have what is called an over-production of Grapefruit when we have only 5,000,000 boxes.

Many confuse a Northern representative or a Commission House, as a marketing agency. They are anything but that. They are merely handlers of produce. They are necessary—but it is our business, whether we think so or not, to increase the consumer demand by a well organized, scientific, educational, advertising, marketing campaign.

Our agents, dealers, wholesalers and retailers merely supply what the people call for. It is strictly our job to increase the demand and consumption of Grapefruit through the various mediums, enlightening the public of the need and value of our Grapefruit, thereby creating a desire for our fruit and increasing its use. It can be done! But not by advertising alone, and not by those who are not skilled in this particular branch of education.

It can not be done by a group of men who do not know how to do the job, or how to select, or direct, or check such an organization.

We haven't the time or money to train some one how to do it, and if we did have the time and money, who would we secure from our group who knows how to train them?

There are such men available. If there were not such men, the Tomato Juice, Pineapple Juice, Coca Cola, and many other products would not enjoy the volume of business that they now have.

The human body should be approximately 80% alkaline in its makeup—that is, the phosphates of the blood, the secretion of the glands, the fluids of the body. The balance of 20% should be acid—but this ratio can be greatly altered by the foods that we eat and the juices that we drink.

A study of the eating habits of all

of the large nations of the world shows that about 80% of the food consumed has an acid reaction, therefore the greater part of humanity is experiencing difficulty with what is known as disease, which is largely caused from an acid ratio. Disease germs thrive in an acid body. In general they die in an alkaline body. That is the main reason that Grapefruit is so successful in breaking a cold or flu. The Grapefruit juice is highly alkaline ash. It quickly raises the body to a normal alkaline ratio—and away goes your cold or flu.

There are more than 80,000,000 people in the United States alone who have a low alkaline and a high acid ratio. Do not misunderstand me—not all of these people have acidosis—but acid cuts down the energy, it creates fatigue and, as Dr. Hay has well stated, if fatigue were contagious it would be quarantined as one of the most dangerous diseases because it is so prevalent.

But we do have approximately 40,000,000 people who are seriously troubled as a result of their high acid ratio, and the greater part of them suffering from rheumatism, arthritis, neuritis, or many of the kindred ailments that are common when one gets far out of line on this important body ratio.

Repeated tests have shown that cutting down on meats and starches, and increasing vegetables and fruits, has greatly helped this condition. Most doctors prescribe this treatment immediately.

Other repeated tests have shown that five or six glasses of Grapefruit juice a day, taken one-half hour before meals or between meals, for a period of thirty days, will greatly assist in the return of a normal body ratio—and after this thirty-day period, if one will use three to four glasses a day, one will increase what is known as the vitality, and lessen the number and severity of colds and flu.

Our repeated tests show that we should use not less than six boxes of Grapefruit a season.

Suppose the 80,000,000 people who are having trouble would attempt to use six boxes per season, this would be 480,000,000 boxes of Grapefruit. Of course you will immediately say that it would be impossible to get all of the 80,000,000 to use six boxes—even though we are entirely ignoring 45,000,000 of our present population.

All right—let's take the 40,000,000 who are spending from \$150.00 to \$300.00 a year trying to climb out of their pit-fall of trouble. Sup-

pose they used six boxes a year. That would be 240,000,000 boxes of Grapefruit. But again you say—surely you would not expect to be able to convert all of those 40,000,000 people. No, bless your dear hearts, I would not expect to convert every one of them. Neither would I expect to take a 10,000,000 box crop of Grapefruit, like we had this year, and have it go begging at 50c a box, when the people of the United States actually need more than 400,000,000 boxes of Grapefruit—saying nothing of export or Canada.

I could give you pages of reasons why Grapefruit should be consumed in quantities, if people are going to continue to eat meats, sugars, starches—drink tea, coffee and liquor (the latter usually about 80% acid)—and I could give you other pages of the reasons why they are going to continue to use some of the less valuable products that are sold—and the entire answer lies in the fact that the other people are using an educational campaign and merchandising their product. We are doing practically nothing and not merchandising ours.

There is no excuse, no reason, for the present situation, excepting our school-boy methods of handling the situation.

We are in a day and age now when it is not sufficient to merely contract for advertising, and run copy in papers and magazines, or even attempt to rely upon radio programs. This is a day and age when there are many educational hook-ups that are necessary, and it is a time when we must, through all of the agencies, create a desire for our product. Anything short of just this is in-effective, in the face of the competition that is directed by experienced, trained educational men who know what they are doing.

Our Growers would not expect to organize a ball club composed of our Growers who had never played ball, and go out and beat the Chicago Cubs or the Detroit Tigers. We probably wouldn't get one run around the diamond. But yet, this same group of men seems to think that we are able to ship our fruit to the market and compete with other products where the most accurate, scientific education is being continually pounded into the public, where all arguments are continually dangled before their eyes and they hear it from every side, and finally their sub-conscious minds believe it, or at least they buy their products.

It is true that we have one of the  
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# THE FLORIDA CITRUS COMMISSION AND ITS WORK

(Continued from page 5)

had not been consulted before or involved in other controversies, and that helped matters a lot. But it was a scrap up until the day when the citrus bills were signed and made law.

It wasn't long until a new fight started again. Have you ever considered why the Governor waited so long to appoint the members of the Commission? He waited because he wanted the pulling and gee-hawing to die down and give bitterness time to wear itself out. The scrapping and accusations of chicanery persisted, however, up until the minute when the Governor appointed the Commission. I want to stress that point. It will not be hard for most of you to realize what went on, for that was the way the citrus industry always worked, with nothing but suspicion and distrust. Almost every factor in the industry was stirring up unrest and being mighty active about it. I emphasize that point because then a marvelous thing happened, an unaccountable reversal, a reversal so sudden, so complete, that the best of us doubted our senses. For from the minute that the Commission was appointed there has been no squabbling. There have been only the kindest things said of every member of the Commission, of the citrus laws themselves, and wonder of wonders, of one shipper by another. Suddenly everybody began to smile and a harmonious and friendly feeling pervaded the old battle ground. There you have the cause for whatever measure of success the Commission has had.

Any group of growers could have done as well but none could have done anything without the harmonious support of the industry. No one knows why the oldtime distrust faded away, but I submit that one large factor has been the active and sincere interest of Governor Sholtz. From the moment that he signed the new citrus laws, and he signed them over considerable opposition, he has never lost touch with the situation. He has proved himself to be a great and a resourceful harmonizer as well as a rigid adherent to the new citrus policy of legal, uniform operation for uniform results. He has stood, not behind us, but with us on the front line and no demand upon his time has been too great nor no task too laborious for him to give freely of his energy and wise counsel. The citrus industry needs men like Dave

## THE CITRUS INDUSTRY

Sholtz.

I wish I had time to tell you about every member of the Commission. Some of them I have known for years; others I met for the first time at our first meeting. To me they all stand out in some particular way. Each of them does his own thinking, and the viewpoint of all of them is that of the grower, because all of them are bonafide growers. Many of us also have a pretty thorough knowledge of the shippers' problems and four of the members operate large plants of their own.

We worked, at first, without committees, which was the wisest thing we ever did. This necessitated a lot of meetings but it prevented the formation of any factions and it permitted the Commission to work as a unit, without politics. It has been repeatedly demonstrated that committee rule makes for factions, that factions make for politics, that politics make for fights, and that fights make for failure. We have no politics — neither federal, state, county, citrus or any of the other kinds. We have no alignments among the members of the Commission. The ones arguing against each other on one point will be pulling together on the next one. It has been the determination of each member of the Commission that this be so. Our work has been helped by the fortunate choice of a chairman, the election of a capable and untiring executive secretary, and the employment of a wise and energetic attorney.

The main duty of the Commission is a simple one. Fundamentally, it is to promulgate rules and regulations for the administration of the citrus laws. The most important of these relate to the standardization of grades and packs, national advertising, maturity and color added. The enforcement is in the hands of the Commissioner of Agriculture.

One of the first decisions faced by the Commission was the selection of an advertising agency. Much has been said about this matter. It looked for a day or so that a nasty wrangle might develop out of the choice of the Commission, but when two agencies operating in this state and several big Florida newspapers supported the Commission in its decision, everybody cooled off and got behind the new advertising campaign. This helped to make it successful — it could not have succeeded otherwise.

Others who follow me are to tell you the particulars of our advertising activities, but I want to take this opportunity to explain publicly why

June, 1936

the agency of Ruthrauff and Ryan was chosen. The Commission determined to get the best it could in advertising agency service, and it gave all agencies a fair shot. We first heard fifteen minute presentations from all agencies wishing to be heard. There were thirty or more of these. From this group the Commission selected five to be heard at length. This number finally was increased to seven or eight, and all of them were given ample time to present their causes. The Commission remained in session for two days for this purpose. Any one of these agencies could have done a fine job—all were experts in their field with outstanding organizations and superlative records of performance. However, some of us had had some experience in citrus advertising and all of us knew of the constant freeze hazard that always hangs over us. Therefore we were fully decided as to what we needed: 1) a first class agency, 2) a campaign which did not call for too great an initial outlay, and 3) a flexible campaign that could be cancelled in case of crop disaster. In amplifying these statements there is no need to explain our desire for a dependable agency. Information as to the dependability of agencies is quickly obtainable through regular commercial channels. As for the second point, a campaign not calling for too much outlay, it should be remembered that the Commission has no credit. It is not authorized to borrow money or to assure any liabilities beyond its resources, and it had no capital. It is permitted to spend only that money which is collected for the exact purpose for which it was collected. Because of this financial situation most campaigns could not be considered because they called for too large an obligation before we would know how we were coming out. Color pages in magazines must be bought months in advance, and other effective forms of advertising media can only be purchased in the same way. These could not be considered at the start of our campaign. I am certain that up to the time when Joe Busk, of Ruthrauff and Ryan, made his presentation, the Commission was a little dizzy over this problem. Mr. Busk offered a campaign that we could slide into gradually, a campaign that could be cancelled overnight with the exception of a small radio obligation. The campaign he proposed was flexible, and by flexible I mean it could be changed daily as to message, locality and display. An advertising program of this kind enabled us to meet at least some of



the complications of our citrus season. This advertising is, of course, commodity advertising, and commodity advertising was then new to Florida. We wanted to be free to switch our efforts to any section of the country and to participate actively in selling Florida citrus with the least lost motion and a minimum of waste in our advertising funds. Ruthrauff and Ryan was the only agency to offer such a campaign and to support its recommendations with positive proof of the success of like campaigns in selling other food and household products. The selection of Ruthrauff and Ryan was a wise choice and they have done a swell job.

You have only to compare this season's records of shipments and prices with those of the last several years to see what has been accomplished by this advertising program. This year's campaign has proved another thing which I believe will please you, and that is that the best trademark or brand name that we can use is the name Florida, a name already well sold to the American public and completely associated with sunshine, health and good living.

One of the purposes of the citrus laws is to identify Florida fruit in the markets for what it is. Rather strict rules were promulgated to accomplish this. They resulted in some complications which would make an interesting story too long to tell here. It is sufficient to say that unidentified bulk shipments are no more, that the truck men like it, and that the trade likes it. The South, which has always been the dumping ground for our culls, has paid good prices for good fruit this season. The trade in all parts of the country reports they have had the most dependable grade of fruit this season that they have ever had from Florida.

Some of those who object to commodity advertising contend that with all of the sales organizations shooting at the advertised markets that no rise in price is possible, and there is a lot of truth in that. All advertising campaigns, to be successful, must be closely linked with a sales plan. We have not had the results from our advertising, grand as they have been, that I believe now we are going to get. With the harmony which has prevailed throughout the industry this season I believe that there is now, for the first time, an opportunity to coordinate the movement of fruit with the advertising. The Commission already is working in that direction. The new federal marketing agreement will help this situation, but nothing can do much good unless

both the big fellows and the little fellows in the industry will work together. I believe that they are now willing to do this.

To me this harmonious situation is the greatest benefit that we have had from the new citrus laws. It will undoubtedly lead to more orderly marketing and that will lead to better prices and a more dependable profit. Thus the whole level of the industry will be lifted and that, ladies and gentlemen, is the real work of the Commission.

In a general way I have tried to tell you of some of the things which have happened and of the situation in the industry today. I have not, however, told you how we work. We do what may appear to be a tremendous amount of unnecessary labor, but we have never refused to hear any legitimate proposal or request. You know there is always someone who has a new idea that to him is the panacea for all of the ills of the industry. You have seen this happen in other activities. We are going to hear a lot between now and November about cure-alls for the good of mankind, for I believe there is somebody running for governor right here in Florida. Well, that is what the Commission has to contend with, too—somebody always has a bright idea and wants to get out in front with it. We cannot refuse such men a hearing. They are earnest people, so we hear some rather fantastic plans for spending advertising money. One suggestion was to drop oranges, attached to small parachutes, all over the country. Another plan was to take a citrus queen from each citrus county and ride them all over the country in an airplane. Compared with well-planned advertising and dignified publicity, such stunts as parades, floats, contests and moving pictures of fruit being picked to send to the President are just nonsense. But we believe it is good business to give every man a chance and a respectful hearing. Our doing so also gives us a chance to explain in detail our plans and the reasons for them to men who might be questioning our methods, because they think theirs are better.

One job of the Commission has been to justify its expenditures. I consider that this has been done. The money collected has been spent for the exact purpose for which it was collected and this has been done in the face of considerable battering for funds by large and influential groups in the state. Not only have these people been turned down if their plans did not fit in with ours,

but they went away apparently boosters for the Commission. There is only one kind of a program that can get that kind of reaction and that is an honest program based upon solid facts, a program that has but one aim—the betterment of citrus marketing conditions.

The members of the Commission are determined to adhere rigidly to the laws under which they operate. We believe that we are here to help and not to hinder marketing activities. We will not construe these laws as blue laws—laws restricting liberties. We consider them as laws broadening and coordinating the rights of all. While these laws are made possible under the police powers of the state, we consider it our job not to give you a ticket for speeding, but to so straighten out the traffic that you may go as fast as you please. We have proceeded slowly so that uniform operations would be possible. We have backed off at times only to come back with greater strength because of a better understanding.

Let me give you one case in point. At the first meeting we had in Lakeland we were faced by a very determined delegation of shippers. There had been quite a wind storm and these shippers had a lot of wind-scarred fruit. But the new state laws, the laws that these very shippers had so strongly advocated, made it mandatory that such fruit be marked as culls. These shippers did not want to mark their fruit as culls, for they already had a lot of it packed under regular brands. They were determined to ship this fruit, and the Commissioner of Agriculture would not let them do it. There were thousands of boxes on the ground and more dropping daily. We also learned that some of these shippers had come with injunctions in their pockets ready to serve and tie the Commission up in the courts, if necessary, until the fruit was shipped. Remember that this was our first meeting since we had been sworn in. Some of us didn't know each other very well. But we soon got our heads together and we soon found that we were not far apart in our ideas. If the new laws were to stand for anything they must stand for something now, we decided. We did not want to start with a law suit. An emergency did exist. There had been a disaster, the season was just starting, the trade in the North was waiting for fruit, somewhat pepped up over the prospect of standardized shipments and advertising. Our advertising had not started then and only a few shipments had

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# The Citrus Industry

with which is merged The Citrus Leaf

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## AN OPPORTUNITY TO AID THE INDUSTRY

A recent trip through central, northern and western Florida convinces the editor of this publication that there is a fertile field for intensive cultivation by the Citrus Control Commission right here in Florida.

In Tallahassee, only a short distance removed from the northern limits of the citrus producing sections of the state, a small glass of grapefruit juice containing conceivably the juice of one-half of a small grapefruit, was quoted on the menu of a leading hotel at fifteen cents. A similar glass of orange juice, which might contain the juice of one fair sized orange, was quoted at a like price. In Pensacola, a little further removed from the center of citrus production, similar quantities of citrus fruits were served at twenty cents per glass.

At drug stores in the same territory citrus juices, when available, were served only at exorbitant prices, though at slightly lower prices than at hotels. At many drug stores neither orange nor grapefruit juice could be obtained.

Further west, in Alabama, Mississippi and Louisiana, states not concerned in the commercial production of citrus fruits, the prices prevailing were lower than in northern and western Florida. Even in the citrus producing sections of Florida, a small glass of orange or grapefruit juice sold over the counter at prices higher than tomato or sauerkraut juice.

This is a condition which should be rectified and one which should have the attention of Florida hotel managers and the Florida Citrus Control Commission. Visitors to the state who have been told or who have read of the oversupply of citrus fruits and who have been led to believe that recent crops have been grown at no profit or at actual loss to the growers, are not favorably impressed when compelled to pay exorbitant prices for the fruit or fruit juices served at eating houses or refreshment booths almost in sight of trees upon which the fruit is grown.

In a paper read before the recent meeting of the Florida State Horticultural Society, and which was printed in the last issue of The Citrus Industry, Mr. B. L. Hamner of Tampa told of the experience of Mr. George Mason when

he took charge of the Tampa Terrace Hotel and began serving guests with free citrus juices each morning as they emerged from the elevator in his hotel. The appreciation of guests was shown by the rapidly expanding popularity of the hotel and the wide publicity given the hospitality by guests who visited other sections and other cities. Every hotel and restaurant keeper in Florida should make it a point to read Mr. Hamner's paper—and profit themselves and Florida citrus growers by adopting the lesson taught.

On the recent trip of the editor of this magazine referred to above, the manager of a popular hotel in New Orleans greeted each guest by sending a basket of fresh citrus fruits to the room immediately following arrival, with a neatly printed card conveying the appreciation of the management—and this in a city not interested in the production of citrus fruits. That this thoughtfulness and courtesy on the part of the management is highly appreciated by the guests goes without saying.

If every hotel in Florida could be induced to inaugurate some such practice instead of charging exorbitant prices for a mere taste of citrus juices, it would do much to popularize the hotel service of the state and to increase the consumption of citrus fruits and juices.

The Citrus Industry believes that the Florida Citrus Commission could do no greater service to the growers of the state than to take up with the hotel and restaurant keepers, the drug stores and soft drink stands, the matter of serving Florida citrus fruits and juices at moderate prices—and in the case of the higher priced hotels, free of charge. There is a wonderful opportunity here for the hotels, eating houses and drug stores to aid in popularizing Florida fruits, aiding an industry which does more than any other one thing except climate, and which runs even that a close race, to bring tourists to Florida to patronize Florida hotels and eating houses and help to swell the patronage of drug stores, refreshments parlors and drink stands.

It might cost the hotels a few cents a day to serve each guest with free citrus juices, it might reduce the revenues of eating houses to charge a nickel or a dime in place of fifteen or twenty cents for a swallow of citrus juice—but it would aid immeasurably to the popularity of the management of those places and go far toward advertising Florida's major industry.

We believe it would be worth while for the Florida Citrus Control Commission to take definite action toward securing the co-operation of hotel and restaurant keepers, drug stores and drink emporiums in a campaign of the nature indicated. Isn't it worth trying?

Congratulations to Nathan Mayo, the popular commissioner of agriculture, who was re-nominated by a vote of more than two to one over his competitor in the recent primary. Nathan Mayo has been one of Florida's outstanding public officials and the voters, recognizing his efficient management of the office, retained him in his present capacity by probably the largest majority ever given a candidate for state office in Florida.

# Citrus Industry Under Soil Conservation Law

Growers Will Receive Benefits From More Sources Than Were Authorized in Old Adjustment Act

By JEFFERSON THOMAS  
Assistant Editor, Florida Agricultural Extension Service

Citrus fruit growers, in Florida and elsewhere, are to be the recipients of benefits from the federal government, under the recently enacted soil conservation subsidy law, on a much broader scale than the original agricultural adjustment act authorized. While details have not been fully worked out as yet, preliminary plans for the application of the measure which was passed in the present congress indicate that individual grove owners may be paid considerable sums from the United States treasury, when they voluntarily cooperate.

Acreage and output reduction of designated basic agricultural commodities, all regarded as staple crops, were sought when the adjustment act was drafted. Additions and amendments at various times somewhat expanded the scope of the measure but did not change the fundamental principles. Compliance on the part of farmers was solicited in return for rental and benefit payments. Compulsory features were introduced through supplementary laws.

Divisions of the agricultural adjustment act other than the ones pertaining to crop control on cotton, grains, tobacco and so on, established the farm credit administration, set up the marketing agreement system for perishable products and authorized surplus output purchases in connection with the federal emergency relief agency. Citrus growers, and to some extent truck crop raisers, were affected by the operations under all these sections in the law.

When the United States Supreme Court declared the production control features unconstitutional, in a decision handed down January 6, 1936, government attorneys reached the conclusion that the findings did not affect the credit, marketing agreement and surplus buying portions of the act. While judicial determination to that effect has not been secured, the activities mentioned were continued with little interruption and practically no delay.

Crop adjustment procedure on the

so-called basic agricultural commodities, clearly was found invalid in the decision. Steps were then taken by the administration in power for the adoption of legislation that would permit the same objectives to be attained, in a manner not at variance with the constitution. Expansion of the existing soil conservation act was decided upon.

Factors that are fundamental in the new laws, passed by congress before February ended, are reduced outputs as regards the major staples, through shifting of production to soil-conserving, fertility-building and erosion-preventing crops. Subsidies are provided for the farmers who curtail the land-depleting planting on their places in favor of the preferred items that build, conserve and protect.

In drafting the effectuating regulations, United States Agriculture Department officials charged with administering the law decided to include practically every type of agriculture and horticulture. Subsidy payments are therefore to be made for acreage devoted to the soil-conserving type of products, even in some cases where no compensating reduction in the principal crop can be effected.

Legumes, such as beggarweed, cowpeas, crotalaria and the like, when turned under as a soil improving practice, probably will qualify the grower for subsidy payments. Acreage devoted to these cover crops in the current season conceivably may serve as the basis for benefits to the land owner or tenant. Months may be required, however, before all the complicating circumstances can be adjusted.

Endeavor in the direction of complete instructions under which farmers and growers may comply with the soil conservation act has been unremitting ever since it became a law. Corn, cotton, tobacco and like products obviously needed consideration first. Crops in the special class necessarily came afterwards, with perishables in the last position.

Conferences have been proceeding on the secondary output from time to time, however, and when this article was written delegates were enroute to a meeting at New Orleans, called by Southern Regional Director Cobb, the conclusions reached in which will doubtless materially affect Florida fruit and vegetable growers.

Administration activities under the soil conservation law are directed through State Agricultural Extension Service almost wholly. Facilities of this agency are employed even more fully than they were with the adjustment act.

Florida Extension Service workers were given the initial experience under the broader demands on their organization when it was assigned leadership in the educational effort which undertook explanation of the new citrus marketing agreement to growers.

## BRUMLEY WILL ASSIST IN STUDY OF PHASES OF CALIFORNIA FRUIT

Dr. Frank Brumley, farm management specialist with the State Agricultural Extension Service, will assist the Farm Credit Administration in a three-months study of several phases of the California citrus industry, beginning July 1.

Dr. Brumley has been granted a three months leave of absence from the Extension Service to assist in the study. While he is working on the project, his work as farm management specialist will be carried on by J. W. Reitz, of the agricultural economics department in the University of Florida College of Agriculture.

The study will begin July 1 and will end October 1. Dr. N. P. Rasmussen, professor of marketing in Cornell University, will be in charge of it. During the study, Dr. Brumley will spend one month in California and the other two months in visiting the principal markets for Florida citrus.



# The Relation Of Cover Crops To Insects On Citrus

BY J. R. WATSON

ENTOMOLOGIST, FLORIDA EXPERIMENT STATION

Our citrus growers have heard a great deal concerning the advantages of a cover crop in a grove from the standpoint of fertility. Perhaps not as much has been said about the relation of a cover crop to insect damage. Nevertheless, a good cover crop is a very distinct help in holding down most of the insect pests found in citrus trees. The explanation of this is that the cover crop aids the entomogenous fungi, which are so important in controlling insects in Florida, particularly during the warmer and more humid part of the year. All these fungi do their best work during a period of high humidity. Dry weather checks their development. Anything which tends to raise the humidity in a grove will be an aid to these fungi. There are low hammock groves in the State in which it is necessary to do very little spraying, as the entomogenous fungi usually control the insects to a satisfactory degree. The more nearly we can approach these hammock conditions in our citrus groves the more active the entomogenous fungi will be and the less damage we will get from insect pests.

The cover crop acts in two ways to raise the humidity in a grove. First, and probably most important of all, by shading the ground it diminishes the reflection of the light and heat from the sandy soil and thus keeps down the temperature in the trees. Bare sand, particularly in the summer time, acts almost like a mirror in reflecting light and heat. You all have noticed that the glare of the sun reflected from the bare sandy soil on a bright sunny day is painful to the eyes and that it markedly raises the temperature of the surrounding air. On a sunny day step from part of a grove with a good cover crop into one clean cultivated and you will at once notice the rise in temperature. As the temperature of the air rises its capacity to hold moisture increases and therefore it becomes drier, or in other words, its relative humidity is lowered, making conditions less favorable for the development of the various

fungus diseases which attack our insect pests.

The second way in which a cover crop raises humidity in a grove is that it gives off a certain amount of moisture which is added to that already in the air. This evaporation of moisture from the leaves is a necessary function of all growing plants.

It has long been recognized by citrus growers that a good cover crop reduces the damage from rust mites. During hot, humid weather a fungus disease is very prevalent on rust mites and by favoring this fungus the cover crop usually reduces the rust mite damage. Whiteflies also have their important fungus enemies, of which the brown fungus, red aschersonia, and yellow aschersonia are the most common. These do a vast amount of good in holding down whiteflies and a good cover crop will increase their efficiency. The purple scale also has three important fungus enemies, the red-headed scale-fungus, whiteheaded scale-fungus, and the black scale-fungus. The Florida red scale has another similar fungus, the pink fungus, which is often very effective in controlling an outbreak. Mealy bugs and the green citrus aphid are commonly attacked by a fungus disease.

It is thus seen that nearly all of our important insect pests which attack citrus have their fungus enemies which help to keep them in control and to lessen the expense of raising citrus in Florida. If it were not for these fungi it would seem as if the commercial production of citrus in Florida. If it were not for these fungi it would seem as if the commercial production of citrus in Florida would be so expensive as to be impractical. All of these fungus diseases will be aided by a good cover crop in a grove.

As to the plants which should be used for a cover crop, from the standpoint of insect control as well as that of soil fertility, the best crops are those which give the rankest growth—those which give off the greatest amount of moisture and those which shade the soil most completely. Of these the crotalarias prob-

ably take front rank. Of course, there are other considerations besides aiding the entomogenous fungi which must be considered by the grower, such as competition with the trees for soil moisture during a dry period. During the rainy season, which is now approaching, the soil moisture is usually ample for both cover crop and trees.

An important qualification of any cover crop is that it will not breed insects which are liable to attack citrus. The only insects which are liable to breed on our common cover crops which are dangerous to citrus are the stink bugs, of which there are several species. Most injurious in the round orange belt is the southern green stink bug, often called pumpkin bug, whereas the most dangerous one in the satsuma belt is the leaf-footed plant bug, a brown insect with a yellow band across its wings. These are liable to breed large numbers on most of the legumes which are our most valuable cover crops in citrus groves. Most liable to breed them are cowpeas, followed in order by *Crotalaria*, beggarweed, *Crotalaria spectabilis* and velvet beans. The grasses, if not mixed with wild legumes, are not apt to breed these stink bugs. This does not mean that we should avoid these very desirable crops in groves but does mean that we should be on the lookout for these stink bugs and take precautions against them. The crotalarias do not breed these stink bugs in large numbers until they begin to produce pods. *Crotalaria striata* is already producing pods in our groves and will continue to produce them in increasing numbers all spring, summer and fall, thus giving the stink bugs a continual food supply. The pods of *Crotalaria spectabilis* are just as attractive as those of *striata* but this plant does not ordinarily produce large number of pods until early fall—September. It then sets a very large crop which quickly ripens. In other words, the pods are present on the plants such a short time that stink bugs do not have time to breed up to large numbers. We have never

had any trouble with these stink bugs where we have had a pure stand of spectabilis, but spectabilis does not grow as well in some of the dried soils of some of our citrus groves. In such soils *Crotalaria striata* can be grown but it should be watched. To be perfectly safe it should be mown when it begins to blossom. If not allowed to produce pods it will not breed stink bugs in large numbers. Of course, this would necessitate reseeding the grove each year. But often it will not be necessary to cut this *striata*. Stink bugs, like other insects, have their enemies which often hold them in control, so that a crop of *Crotalaria striata*, cowpeas or beggarweed does not necessarily mean a heavy infestation of pumpkin bugs, but it should be watched. If by the middle of September there is a considerable number of stink bugs on the cover crop it should be mown. In the case of a tangerine grove this mowing should not be later than the 1st of September, and in the case of satsumas the middle of August. These stink bugs will breed on the stems of cowpeas and beggarweed as well as on the pods.

It is very important that these cover crops should not be mixed in a grove. In other words, avoid having a continual food supply for these stink bugs throughout the summer. What may happen if they are mixed was demonstrated strikingly a few years ago in a satsuma grove in West Florida. The owner wanted to compare cowpeas, *Crotalaria striata* and beggarweed, so he planted a third of his grove to each. The stink bugs began to breed on the cowpeas in early summer. As this died down they migrated to the beggarweed in thousands. As this died down in late summer they migrated to the *crotalaria* in hundreds of thousands, where they again bred such large numbers that they took all the pods off the *crotalaria*. The next migration was to the satsumas which were total loss. The owner unwittingly provided a constant food supply for the bugs all summer. Therefore, avoid mixing cover crops which will breed pumpkin bugs during the first part of the summer. Herein lies the danger of *Crotalaria striata*. Beggarweed and cowpeas dies down to a considerable extent before the citrus is attractive to the stink bugs, but the *crotalaria*s are liable to carry over the stink bugs up to the time the citrus is attractive to them.

As long as the pods are on the *crotalaria*s the stink bugs will not leave them for citrus. It is only when something happens to the pods; they

get ripe or a drouth or hurricane strips them from the plants, or when the bugs themselves get so abundant as to take them all off is there a migration to citrus.

In conclusion, a good cover crop in a grove is a great help in controlling insects, especially rust mites. The only danger is that some of the

legumes may breed stink bugs. These should be watched and if they become heavily infested should be mown before the middle of September in the case of round oranges, the first of September in the case of tangerines, and Parson Browns, and the middle of August in the case of satsumas.

## Clean Up Measures Against Rust Mites On Citrus

*Citrus Rust Mites*

BY J. R. WATSON, FLORIDA COLLEGE OF AGRICULTURE

Most of the citrus belt has just passed through a period of several weeks with very little rain. This hot, dry weather has been very favorable for the increase of rust mites. Furthermore, there has been more spraying with Bordeaux and other fungicides for the control of melanose this year than perhaps ever before. This spraying has a tendency to kill out the friendly fungus which, during favorable weather, is very effective in controlling rust mites. For these two reasons then: because of the long dry weather we have passed through and the prevalence of melanose spraying, growers should be particularly on the look out for rust mites for the next month or six weeks. As the rainy season sets in the fungus disease will gradually build up until it will doubtless control the rust mites, but it will be readily apparent that it will take some weeks of hot, humid rainy weather to build up the fungus to a point where it can be depended upon. So, it will probably be sometime in July before the grower may somewhat relax his vigilance against rust mites. Never should he entirely forget about them because a few dry days, even in the heart of the rainy season, will often cause a dangerous infestation of rust mites. But the next month is a critical time for rust mites, during which the grower must be on special guard against them.

I do not need at this time to remind the growers of the damage that the rust mites do in discoloring his fruit, reducing the size of the fruit, and the keeping qualities. One who wishes to produce first class fruit must control the rust mites in his grove. The control measure calls for sulfur in some form; either dusting with finely ground sulfur or spraying with lime-sulfur are the two chief methods of control. Each method has

its advantages.

Dusting is ordinarily cheaper and can be applied much more quickly. Finely ground sulfur is necessary, the more finely ground the better. A common practice is to mix a little lime with the sulfur to make it go through dusting machine better, using about five pounds of lime to 95 pounds of the sulfur. The lime has no value in killing rust mites, its only purpose is to prevent clogging of the machine. Indeed, too much lime would be objectionable as a heavy deposit of lime has a tendency to in-

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crease scale insects on the trees.

A common mistake in dusting for rust mites is to try to be too economical with the dust. Sulfur dust is cheap and one cannot afford to stint its use. A good sized tree should be given one-half pound of dust. If one has a dusting machine and does not need to take any measures for the control of whitefly and scale insects probably dusting the grove would be the best plan. However, if followed by a rain inside of three days after application dusting will not ordinarily give as good control as spraying. The reason is this. Neither dusting or spraying will give a good kill of the eggs but in three days most of them will have hatched, and if the sulfur is still on the tree the young mites in crawling about will get near enough to the material to be killed by the fumes given off. If one gives a good, thorough dusting there will be enough dust left on the trees unless there has been a heavy rain. In a case of a heavy infestation of eggs and a heavy rain a day or two after the dusting, it may be necessary to repeat the application in a week or so.

The standard spray for rust mites has for many years been lime-sulfur. In the last year or two the practice has become general of adding a little wettable sulfur to the lime-sulfur. This has two distinct advantages. In the first place it is an excellent spreading agent and results in giving a more thorough coverage to the trees and fruit. In the second place by adding that much more sulfur to the spray it gives you more effective control of rust mites, or allows the grower to reduce the concentration of lime-sulfur.

If used too strong lime-sulfur will burn tender foliage, particularly during hot weather. The addition of wettable sulfur will enable one to reduce the amount of lime-sulfur in the spray to a point that is safe and at the same time give an effective

control of rust mites. At this time of year about the proper proportions will be two gallons of lime-sulfur, testing 32 degrees Baume, to 100 gallons of water, with the addition of from 5 to 10 pounds of wettable sulfur. If the weather gets very hot this can be reduced to 1½ gallons of lime-sulfur. However, it is best not to spray the trees during the middle of a hot day. If the temperature gets over 90 degrees F. it is safe to discontinue the spraying. During hot weather spraying can be confined to the early morning and late afternoon when the temperature is not so high. However, the trees must be dry when sprayed. If they are wet with dew or rain it is evident, of course, that the water on the trees will dilute the spray, perhaps to a point where it is no longer effective. It is particularly important to be careful about spraying a tree which is wilting because of drouth. Under these conditions it is much more easily injured.

Lime-sulfur has the further advantage in that it will kill the early stages of scale insects and whitefly, thus giving the grower a chance to kill two birds with one stone, or rather three or more insects with one spray. For this reason, if there is any considerable amount of scale insects or whitefly in the grove, as well as rust mites, spraying would be advisable rather than dusting, particularly if the grove is not so large as to take too long to spray.

Many growers at this time of year will spray or dust their groves at stated intervals, irrespective of the number of rust mites on the trees. This, however, is a wasteful proceeding. Many times the spray or dust will be applied when it is really not necessary. Of course this is much better than neglecting to spray or dust. The economical method of controlling rust mites is to watch your trees and fruit. When one finds any considerable number of rust mites on

the fruit he should spray. For this purpose one must provide himself with a good hand lens magnifying at least ten times. When one finds an average of from two to five rust mites in each field it is time to take measures against them. By a field we mean that part of the fruit which can be seen without moving the magnifying glass. A method which has given similar results is to figure the percentage of fields which are infested. This obviates the necessity of counting the rust mites and is therefore quicker. When from 20% to 25% of the fields are infested the danger point has been reached.

The economical method of fighting rust mites, therefore, is to provide one's self with a good magnifying lens and occasionally, at least once a week at this time of year, examine the fruit here and there. One cannot, of course, examine every fruit or even every tree but on the other hand it is not safe to confine one's self to one part of the grove as it often happens that rust mites will be very scarce in one part of the grove and abundant in another. Therefore, one should zigzag through the grove and get a representative examination.

It is well to remember that on a tree fully exposed to the sunlight rust mites are apt to appear first on the southeast side of the tree. This side should receive especial attention. Furthermore, on a fruit fully exposed to the sunlight, the rust mites are most apt to appear on the shady side, whereas on a fruit somewhat shaded by leaves they are apt to appear on the least shaded side.

Summing up then, the next month or six weeks is usually the most critical period of the year from the standpoint of rust mite injury and growers should be especially on the look out for this pest, and if found in dangerous numbers they should resort to dust or spraying.



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# Suggestions For Summer Pest Control

W. L. THOMPSON, CITRUS EXPERIMENT STATION, LAKE ALFRED, FLORIDA

From the second week in June until the first half of July there are four major pests of citrus to be considered; namely, purple scale, white-fly, mealybugs, rust mites, and, to some extent, purple mites. If there is a light infestation of purple scale, and if lime-sulfur supplemented with wettable sulfur is to be used, this spray should be applied within the next couple of weeks in order to obtain the most effective control as scale crawlers are becoming abundant. The cloudy-winged whitefly adults have about reached the peak, which means that the young whitefly larvae will soon be numerous, and it is in the young stage that they can be more easily killed with lime-sulfur. However, lime-sulfur is not very effective against the whitefly larvae after they have become anchored to the leaf. Incidentally, lime-sulfur sprays will give an excellent control of rust mites which are becoming numerous in groves that have had no sulfur sprays recently.

Purple mites are rather abundant in some groves. An oil emulsion is much more effective against these mites than lime-sulfur; unless two applications are made at 10 day intervals.

Where bordeaux mixture was applied for melanose control, and where there is any degree of purple scale present, an oil emulsion should be used. Mealybugs are more abundant this year than usual and at the present time the young crawlers are numerous and will continue to be for the next ten days or more. An oil emulsion is fairly effective against young mealybugs but not after they have covered themselves with a waxy material which they secrete. If mealybug control is attempted, the spray should be applied with as much force as is safe; that is, not so strong that it will knock off too many leaves or fruit. Not only the trunks and limbs of the trees should be well sprayed but also any secluded places; such as, bunches of fruit, and old, unhealed wounds.

Should whitefly and purple scale be the only insects to deal with, it might be better to wait a couple of weeks before spraying with oil so that more scale insects will be in the young intermediate stages and so

that most of the whitefly eggs will have hatched. The time to start spraying is regulated by the acreage to be covered.

The summer flush of growth in most groves is rather late this year; the grower should watch for spray injury after the spraying operation has started, especially if strong lime-sulfur solutions are used. If the weather is not unusually hot, lime-sulfur 1-60 plus wettable sulfur 5 to 10 pounds per 100 gallons should be safe. On June 6 when the temperature ranged from 84 to 87 degrees lime-sulfur 1-50 supplemented with wettable sulfur 5 pounds per 100 gallons did not cause injury; except on very young foliage a trace of

spray burn was observed. Should an oil emulsion be used apply it at the concentration recommended by the manufacturer. Be sure the trees are dry before applying an oil emulsion, because if they are not, poor scale control will likely result. Also, be sure the trees, especially the fruit, are fairly free of any amount of sulfur before spraying with an oil emulsion as injury may occur. An oil emulsion is not a very reliable spray for rust mite control unless a complete coverage of fruit and leaves is obtained. When rust mites are abundant, it is probably better to apply a sulfur and wait until it is washed off before making the oil application.

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(Continued from page 9)

left the state. That was the situation. What would you have done? Here was the Citrus Commission trying to get started under laws from which thousands of growers throughout the state expected so much, and on the other hand we had a few thousand boxes of fruit on the ground, some excited shippers with injunctions in their pockets, and the prospects of another silly citrus fight that might nullify all of the constructive work done the year before. I'll tell you what we did: we struggled all afternoon but we harmonized that situation. We harmonized it by giving a little; we harmonized it by convincing those shippers that the problem was bigger than just some grapefruit on the ground that would probably take a licking in the market anyway. We reminded them that they had made these laws, but that the responsibility for administering them now was ours and that we were entitled to a fair show. Then they began to relax a little, somebody smiled a little and then there we were with our arms around each other again. Well, it was great stuff and you can imagine how happy everybody was. We permitted them to ship the fruit that had been packed as labelled, but the fruit in the bins and on the ground they had to ship as culls or send it to a cannery. Out of this situation came the third grade for fruit, now in force. Personally, I am not so hot about this third grade. Florida, in my opinion, needs a juice grade—a grade to take all but the best textured brights and goldens and to be shipped as juice fruit. The value of the fruit is based upon its content, anyway, and not upon something which is peeled off and thrown away. Maybe someday we will have sense enough to stop selling fruit on the California plan. California fruit has appearance but little inside of it. We have the juice content so why not capitalize it?

The future offers many problems. Competition will be greater and more intelligent. We must meet that with more perfect coordination and greater advertising. Our citrus laws must be reviewed constantly to meet changed conditions. We have had a season of higher prices and harmonious operation. Let us continue to work together—I mean work, hard work. This industry must be stabilized and that is the work of the Florida Citrus Commission.

## The Control Of Cottony Cushion Scale

BY DR. E. W. BERGER,  
ENTOMOLOGIST, STATE PLANT BOARD

The story of cottony cushion scale and *Vedalia* is getting to be an old one, but never old when considered from the standpoint of importance and interest. It concerns one of the few, if not the most outstanding, instances of using one insect to control another.

The *Vedalia*, which is also called the Australian Ladybeetle, effectively controls and sometimes even exterminates the destructive cottony cushion scale.

This scale, reddish-brown in color, is one of the larger scale insects found infesting certain trees and plants in Florida. Its white, fluted cottony egg-sac, which begins developing as the insect approaches maturity, makes this scale unusually conspicuous on the plants it attacks. Hundreds of the small pink eggs, readily visible under a hand magnifying glass, lie enclosed in each sac.

After some time, the eggs hatch into minute pinkish crawlers, as the newly-hatched scales are called. These congregate largely on the bottoms of leaves, where they begin to feed by inserting their sharp sucking beaks into the leaves. When approaching maturity, they migrate from the leaves to the bark and begin the growth of egg-sacs.

This scale was brought from Australia into California on some acacia trees in 1868 or 1869. It soon spread to citrus and other trees and by 1888 had become a serious pest, especially of citrus.

Insecticides applied at that time proved ineffective, as they do now, since the eggs and newly-hatched young scales are too well protected inside the cottony egg-sacs. In other words, the effective control of the scale by spraying would require so many applications that the cost would be exorbitant.

But, why spray? While cottony cushion scale had become a serious pest in California, it was not known to be a pest in Australia. Hence, growers and entomologists, headed by C. V. Riley, chief of the division of entomology, began wondering what natural agency, if any, might be

keeping it in check in Australia. The idea of sending an entomologist to Australia to investigate the situation gradually matured and, in 1888, a Mr. Albert Koebele, an entomologist, was sent by the State Department as a delegate to the Melbourne Exposition with instructions to learn, if possible, what was checking cottony cushion scale in Australia.

One will note that it was not the U. S. Division of Entomology, as the present U. S. Bureau of Entomology and Plant Quarantine was called at that time, but it was the State Department under Secretary Blaine that delegated Mr. Koebele to go to Australia. Efforts to get a special appropriation from Congress or to get permission to use some of the funds of the Division of Entomology for this purpose proved futile, so that the subterfuge of sending an entomologist under the auspices of the State Department had to be invented.

It appears, also, that the Melbourne Exposition in Australia was being held at a very opportune time to facilitate the operations of the Division of Entomology and the needs of California growers who began to visualize themselves as about to be ruined by the spread and increase of cottony-cushion scale.

Mr. Koebele sent back various predatory insects and parasites, but none showed the promise that the *Vedalia* did. One hundred and twenty-seven specimens of *Vedalia* were received in California from Mr. Koebele and

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propagated by a Mrs. D. W. Coquillett, another entomologist. They were distributed among scale-infested properties in California. In about 18 months, the war against cottony-cushion scale had been won by the Vedalia. Since then, this has been the classical example of the natural control of an insect pest by another insect. It suffices to state here that cottony-cushion scale has never since become a menace in California. Wherever Vedalia has been carried to control cottony-cushion scale, it has been just as effective; in South America, Africa, New Zealand, or Florida.

Cottony-cushion scale was first discovered in Florida at Keene, Pinellas County, in 1893. As the infested trees and all surrounding trees thought to be infested were destroyed and the area burned over, it was believed that there was complete eradication of the pest. But, in 1898 and 1899, the scale was again found about two miles from the first infestation.

Professor H. A. Gossard, Florida Experiment Station entomologist at that time, introduced the Vedalia into Pinellas county and but little trouble with the cottony-cushion scale has been experienced in that section since

then. Cottony-cushion scale continues to be present in Pinellas County in certain localities, but so does the Vedalia, and for a long time the propagation and distribution of this useful predator was carried on from there. The Vedalia was shipped to other infested sections of the state.

Since, about 1916, the Entomological Department of the State Plant Board has undertaken the distribution of the Vedalia and, judging from the numerous requests received, Vedalia is regarded as the specific for the control of cottony-cushion scale in Florida. The department will furnish a colony of 19 Vedalia, enough to get them started in an infested property, to any grower sending in \$1.

#### A CORRECTION

In the article written by K. E. Bragdon carried in the last issue of The Citrus Industry under the caption "Quality Fruit, From The Standpoint of Production", a misplaced figure has caused Mr. Bragdon considerable difficulty and a lot of explaining. As the result of a typographical error the sentence reads "the average for the year being a 1-2-3 ration of nitrogen, phosphoric acid and potash." The figures should have

been 1-2-2.

Mr. Bragdon states also that he failed to carry the per box returns in the table which was carried along with his article. The total net per box returns per tree were \$1.31. The per box cost of production was .51c, leaving a net profit of .80c per box.

#### SALESMAN'S NAME OMITTED FROM ADVERTISEMENT

In the advertisement for Nitrate Agencies carried in last month's issue of The Citrus Industry the name of C. Van E. Hopper of Lakeland was inadvertently omitted from the copy which appeared. In checking the list of salesmen and in writing and re-writing the list Mr. Hopper's name in some inexplicable manner was lost in the shuffle. Since he is one of the very valuable members of this organization we are anxious that our readers should know of this oversight.

The history of every nation is eventually written in the way in which it cares for its soil.—President Roosevelt.

The first federal appropriation for forestry work in the United States was made in 1876.

R. L. KING, President

JACK KERNS, Vice-Pres.

HOKE SMITH, Sec. & Treas.



Just Three Words To  
Remember  
**Rex "Florida Ace"**  
THE Fertilizer that puts  
money in your pockets!

**REX FERTILIZER COMPANY**  
Jacksonville, Florida

Sales Representative  
**HERBERT L. LYMAN**  
722 E. Amelia Ave.  
ORLANDO, FLA.  
Phone 3392



WE SPECIALIZE  
IN  
GROVE SERVICE



### THE PLIGHT OF GRAPEFRUIT (Continued from page 7)

most important products that is produced—more important because of the unscientific methods used by the major population in their eating. Our product is one of the greatest corrective agencies known to man. But it matters not how important our product is to humanity, if they do not know it. It matters not how important it is, if we do not use modern educational methods in bringing this to the attention of the population of this country, constantly.

A woman wrote a beauty specialist and asked what she must do to have soft white hands, and the beauty specialist replied—"Do nothing—and do it constantly."

We have done nothing, constantly, for seven years, and we have gotten ourselves into a condition where mere advertising will not solve our problem.

In the first place, we have got to have merchandising specialists.

In the next place, we must have an advertising counsel who knows exactly what our money will do in the various fifty-seven different directions—when to let up here and when to bear down there.

We can not get these results by merely advertising, or by employing people to handle our merchandising who are new to the business and have never merchandised food products, and who are not well schooled in the merchandising technique from every angle, because we are competing with the very wisest business men who have this information.

Results are what we are after, and we may have a very superior product and then not sell it, if our methods of merchandising are not also superior.

I have said that the people of the United States need more than 400,000,000 boxes of Grapefruit for the protection of their health and their well being.

Please remember that we are producing only approximately 75,000,000 boxes of Oranges, Lemons, Grapefruit, Tangerines and Limes, in California, Arizona, Texas, Florida and Porto Rico—and yet, the population of the United States alone needs 400,000,000 boxes of Grapefruit.

In the face of this situation, we are not only not educating the people of this Country as to what they should do, but we are spending a greater part of our money and ammunition in competitive advertising, telling how much better our product is than that of some other State,

whereas we should be throwing our weight of argument in to the reasons for using more citrus, what it will do for each individual, why they should use it, and showing how there would be a tremendous shortage of Grapefruit if the people attempted to use it according to their needs.

We should be ashamed of ourselves as Growers, Shippers and men, when we consider the fact that the benefits derived from the use of Grapefruit are so great that if they were all accurately and definitely stated in one booklet, we would immediately be accused, by other industries, as Growers exceeding our rights unless we had the authority of each statement establishing the proof and right to make such statements—and yet, in spite of the fact that we have in our possession more statements than we would need to use, they lie hidden under a bushel—and Nero still fiddles while Rome burns—and the Growers meet each other on the street and say "Isn't it terrible about these Grapefruit prices something should be done"—and then the conversation drifts off to the method of spraying, or fertilizing, or some kind of a new box in which to ship the fruit to the market, and usually ends up by a comment on the weather, and they move on.

But—no action is taken by any of the thousands of Growers, and the days lengthen into months and years, where this needed valuable product is not sold, goes to waste, or at least there is very little return—while our competitors are making out their annual reports of large profits because they have had enough optimism, enough business sense to invest money in an educational campaign, exactly as the Tomato Juice people were compelled to do before they ever sold a case of their product—and let me tell you here that had they not put on this campaign, most of the original tomato juice would be on the retailers shelves today.

The whole answer lies in the difference between whether we do, or whether we don't. We have been doing mostly "don't".

We are Growers and Shippers. We have not been merchandising, marketing men—but still worse, we have refused to listen to the few who have tried to lead us in to the proven successful ways of merchandising.

I have spent the major part of my time for a number of years in the markets. I have spent a considerable time in the camps of the other industries, seeing what they were doing, and why they were successful.

Much of my time during the last

year, I have been writing letters to our important Growers and Shippers who should have gotten some action long before this.

But I have about arrived at the conclusion that marketing our product means so little to them, that they would rather grow Grapefruit and ship it to the market and get nothing for it, than they would to spend 5c a box in an educational campaign and secure a Dollar a box average for all grades on the tree.

I have about come to the conclusion that when our Grapefruit is marketed at good prices, that the Tomato Juice Industry, or the Pineapple Industry, or the Citrus Industry from California, or perhaps the Banana Industry through the United Fruit Company, will have to discover our product—will discover the need of the public and the retail dealers to market this product, and will come to the rescue and buy everything we have at perhaps slightly better prices than we are getting, and make 100% on their efforts for their ingenuity and foresight and ability in spending a nickel a box to get back a Dollar a box.

If the Growers of Florida could all be transported to California and were producing the same sour, bitter Grapefruit that they do in that territory—and if California could be transplanted to Florida with the product that we are now producing here—we would never be heard of. We would not ship our Grapefruit. We would not use it ourselves, and we would soon start chopping down our trees and grafting over to some other variety, just as we are now doing in this state.

If the crime that we are now committing of cutting down Grapefruit trees, and budding over to Oranges, is not one of the worst crimes of the age, then I know nothing about crime or justice. If we haven't any sense ourselves, there should be some one from the Department of Justice from Washington come down here and get

## PATENTS

Send me sketch, picture, or model of your new invention. I will give you prompt report on its probable patentability based on a search of the patent records for a small charge.

PLANTS, BUSHES, TREES, VINES, ETC.

can now also be protected by Patents.

International Building

GEORGE E. COOK

Washington, D. C.

Registered Patent Attorney

out an Injunction against such procedure, for the reason that the health and prosperity of this Nation is jeopardized by depriving the people of this product. Of course, our people do not know this. We do not tell them. Our fruit is canned at a low price, or drops on the ground, and the Tomato Juice crowd still continues to sell their product.

Now, after all of this, what are we going to do about it?

You might just as well have saved your time in listening to these statements if you are going to do as we usually do, which conforms to the nothing and do it all the time."

It lies entirely with us. It is not a difficult problem. The only big problem is to wake our people up—get them together—get them to a point of agreeing to spend 5c a box for education, and then securing the best counsel and trained men possible, and there are such men available.

There is no use in spending 5c a box with a green, inexperienced marketing organization, which is gaining experience at our expense—but if we do such a foolish trick as this, the fault still lies with us.

If this matter is properly handled, we need not worry about the big Texas crop, or the Texas people shipping by boat. We need not worry about California's new boat rates—and we would not need to worry about our own boat rates that flood the seaboard markets.

Of course, we do need distribution, and we do need education. The two combined would only enable the consuming public to secure around 75,000,000 to 85,000,000 boxes of all citrus fruits for the entire nation—where the United States alone needs 400,000,000 boxes of Grapefruit—and the combined production of our Grapefruit, even for the estimate of the coming year, would not be more than 25,000,000—so, again I say, we would not have a difficult job if we would properly spend 5c a box in educating our people, and do just a little distribution—not much—just a very, very little.

Again I say, if we do nothing then we can continue to call a small production of Grapefruit, an over-production. But this is not a true statement. Call a Spade a Spade. It is simply a gross under-consumption of a much needed product that is not used because the producers fail to create the Consumers' demand by an honest, intelligent, educational campaign. If this were properly done we could change our entire situation in three weeks' time—and this is much better than trying to cut down

Grapefruit trees and change them over to another variety in three years' time. Better for us—better for humanity. It might be a little hard on our energy to think and take such action, but it is better right on.

We would then not need to worry about the long season, and shipping our fruit green. For Heaven's sake, be sensible! Give the Northern people credit for having a little sense. They know what ripe Grapefruit tastes like, because they have had plenty of it along in the middle and end of the season. So don't try to ship green Grapefruit in September, when it has no juice, and will pucker the mouth of the user about as a green persimmon would, or a green apple, or a green peach.

Proper education would enable us to market all of our fruit after it is fully matured—and while it has been stated that we would never see \$4 prices again, that all depends on whether we market our fruit or just ship it to the market. We can see \$4 prices, or \$5 prices, or \$6 prices, depending upon the amount of interest, energy and expenditure that we put into it.

(Concluded next issue)

"He was kicked out of school for

cheating!"

"How come?"

"He was caught counting his ribs in a physiology exam."

#### CITRUS GROWERS INVITED TO CONFERENCE (Continued from page 3)

agreement, and

"BE IT FURTHER RESOLVED" that we express our willingness to undertake a more comprehensive program for the further advancement of the industry, in cooperation with those engaged in marketing Florida fruit, providing that interested growers and shippers will make known their wishes in these matters, and providing also that they will pledge their active support in the work of formulating and administering such a program."

A proposal that unprofitable citrus trees be removed from sub-marginal Florida lands, under the provisions of the Soil Conservation and Domestic Allotment Act, also was approved. Earl W. Hartt, Avon Park member, reported that federal agricultural authorities had promised their cooperation in such a program, which would involve payment of the cost of removing trees by the Agricultural Adjustment Administration.

## ORANGOL FOR SUMMER SPRAYING

ORANGOL Spray Emulsion has proven itself to be a highly satisfactory oil emulsion for summer spraying of citrus groves. ORANGOL is a complete spray. It is not necessary to add other materials to it to make it effective. It has other distinctive advantages which recommend its use to citrus growers troubled with Scale Insects and White Fly.

ORANGOL BOOKLET AND INFORMATION MAILED  
IMMEDIATELY UPON REQUEST

#### OTHER PRODUCTS

OBRITE DUSTING SULPHUR  
OBRITE LIME SULPHUR  
SOLUTION  
SUPERIOR WETTABLE SULPHUR  
MARVEL WETTABLE SULPHUR  
COPPER COMPOUNDS

ORANGE MANUFACTURING CO.  
ORLANDO, FLORIDA

# Present Status Of Lime Bark Diseases

BY W. B. TISDALE  
 PUBLISHED IN PROCEEDINGS FLORIDA STATE HORTICULTURAL SOCIETY, 1936

Two years ago, I described before this society a bark disease of Tahiti lime and Perrine lemon trees and stated that two fungous parasites, *Phomopsis citri* and *Diplodia natalensis*, were causing the trouble. At that time, it was also pointed out that these fungi initiate their attack on the trees in growth cracks in the bark, thorn punctures, pruning wounds and other kinds of mechanical injury. Experiments had been inaugurated at that time and others were started during the summer of 1934 in an effort to determine some practical method of control. Unfortunately, however, practically all of the experimental trees were killed by the freeze in December, 1934, and it was not until this spring that trees could be procured for a new start. Consequently, little experimental progress has been made during the past two years. The most that can be done at this time, therefore, is to give you further information obtained from surveys of groves and to offer certain suggestions which may be of benefit in holding the disease in check until more definite information can be obtained.

Observations made during the spring of 1935 showed that the twigs and larger limbs of many trees that were injured by low temperature in December 1934 continued to die back after growth started and usually showed an exudation of gum from the lower extremity of the dead portion. A similar condition has been observed in trees severely affected by drought. As a rule, gum did not begin to appear until after the injured parts became infected and the trees started growth. Gummy was also

prevalent on orange and grapefruit trees injured by the cold and drought, but usually the twigs and limbs did not continue to die back after active growth started. In many such cases, *Phomopsis* was producing spores in abundance on the dead wood in early spring and the new growth in the vicinity of this dead wood showed heavy melanose infection. This condition was observed on the lime and lemon, as well as on orange and grapefruit. Cultures made from the juncture of healthy and dead wood invariably yielded *Phomopsis* or *Diplodia*, the *Diplodia* being more commonly obtained from the trunks and large limbs. Occasionally, the wither-tip fungus, *Colletotrichum gloeosporioides*, was also obtained from the dying twigs and branches. This fungus is also parasitic in lime and lemon bark and wood. A good percentage of young Tahiti lime and Perrine lemon trees thus affected early in the spring continued to die back to the union with the understock. Thus, it appears that any factor or combination of factors which weakens the trees or parts of trees, predisposes them to infection by *Phomopsis* and *Diplodia*.

In the case of Tahiti limes and Perrine lemons, it has been observed that longitudinal splitting of the bark occurs on the trunks and limbs during the growing season. So far insufficient data has been obtained to show any definite correlation between this splitting and the kind and amounts of fertilizer used or cultural practices, but more of it has been found in certain groves than in others. Infection occurs in many of these cracks and often a considerable volume of the bark and wood is invaded before the infection is detected. Indeed, infection of the trunk and limbs of trees two or more years old is always difficult to detect until gum appears on or around the diseased parts. By this time the foliage of the top or affected branch may be yellow and death of the part rapidly approaching.

Older grove trees that were not given attention soon afterward became infected in the split or broken branches and many of the affected parts have died suddenly this spring.

In some instances, the entire tree has died. On the other hand, trees that had the injured branches removed and the wounds treated soon after the hurricane show comparatively little infection now. These cases are pointed out to emphasize that the Tahiti lime and Perrine lemon woods are more susceptible to infection and invasion by *Phomopsis* and *Diplodia* than other varieties of citrus tested and because of this it appears necessary to give them more care to prevent mechanical injury and to treat any injuries which may occur as soon as possible thereafter. All dead or diseased limbs should be pruned out, making the cut below the dead portion and, immediately after pruning, the cut surfaces should be painted with a disinfectant or suitable paint. The grove should be given good care after pruning in order to bring about a strong vigorous growth that will be more resistant to further attacks of the fungi.

Many growers have experienced considerable difficulty with young trees planted in groves this year. In some groves a percentage of the trees have failed entirely, while a high percentage of the remaining ones have died back from the cut end for one inch to more than half the length of the trunk. Many of the trees are still dying, as indicated by the exudation of gum and wilting of new shoots on the lower half of the trunk. In some instances, *Phomopsis* was producing abundant spores on the dead wood and young shoots below showed severe melanose infection. You may wish to know why this condition is more prevalent this year than it has been at other times.

## FOR SALE

Lists of Florida Citrus Growers compiled from recent survey of groves, arranged by counties. Names, address, acreage and legal description.

Also List wealthy residents of Florida

**National Survey Co.**  
 P. O. Box 163  
 ATLANTA, GA.

## J. F. AHERN

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Jacksonville, Florida



First of all, lime and lemon wood is very susceptible to infection. In the second place, the trees, especially the ones that were set late, have been exposed to cool drying winds which dried out the trunks and retarded growth, thus making them more susceptible to invasion by the fungi.

It appears that the best treatment for trees thus affected is to cut off the trunks below the dead portion (being sure to remove all discolored wood), treat the cut end with a fungicide and then with a safe wound dressing to prevent further drying out. The experiments started this year have shown that the wound dressing, Sav-A-Tree, is injurious to lime wood when placed on the freshly cut ends of the trunks of young trees. It would perhaps be best to wait until new growth starts before removing the dead parts.

What is the remedy to prevent this trouble? Many growers would like to know. We are trying to find out. Experiments were started this year to test certain possibilities. These experiments have not gone far enough to warrant conclusions, but the indications are that a combination treatment which will prevent infection and drying out may be most effective.

What has been said is based primarily upon observations made during the past two years. It is hoped that in the near future sufficient experimental data will be available to permit definite recommendations. In the meantime, it would seem advisable for growers to employ a system of grove management that will keep the trees in a vigorous condition and to inspect the trees at frequent intervals and remove diseased parts and treat wounds and injuries to prevent further infection.

Scale insects on oleanders and other flowers may be controlled by spraying the plants with an oil emulsion similar to the sprays used on citrus trees. For oleanders, the spray should be not more than half as strong as those used on citrus. Treatment should be repeated at intervals of two or three weeks.

There are 1,263,909 acres in the Choctawhatchee, Osceola, Ocala, and Apalachicola National Forests in Fla.

### E. L. LORD

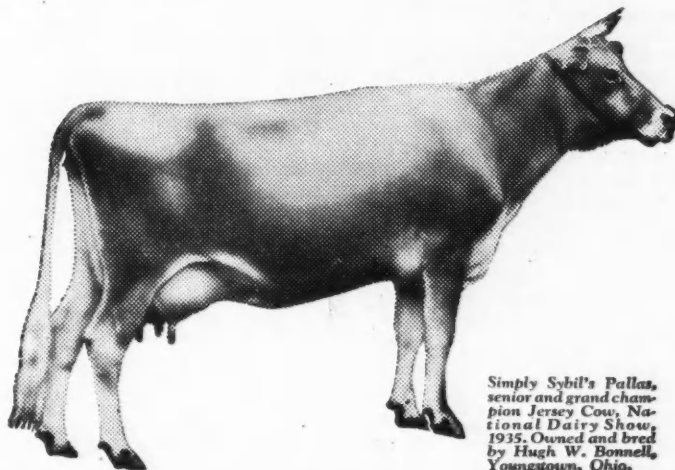
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Grove Advisory Service  
Economical, Safe, Effective

Why not give your grove a break?  
P. O. Box 757

WINTER HAVEN, FLORIDA

## THE COW OF COWS



Simply Sybil's Pallas, senior and grand champion Jersey Cow, National Dairy Show, 1935. Owned and bred by Hugh W. Bonnell, Youngstown, Ohio.

**J**ERSEY COWS are common enough—but Simply Sybil's Pallas is a breeder's dream come true. Near perfect in every respect—wonderful body, level top carrying out well both ways, deep veins, marvelous udder in texture and attachment—fully worthy of her proud title, National Champion. She is the Cow of Cows.

This magnificent Jersey Champion is Nature at her peak—a creature gifted with the vital spark that only Nature can supply, a natural balance of all the elements required in the making of a champion. This natural balance of vital elements is the principal difference between Simply Sybil's Pallas and a common cow—the difference between the best and the rest in almost everything.

And here's another example of the natural balance that makes true quality—Natural Chilean Nitrate. Into this nitrate nitrogen, Nature blended her own secret balance of vital impurities, many minor elements over and above its nitrogen. And Nature herself, aged, cured and mellowed this product through countless centuries in the ground. That is why Natural Chilean stands out a quality fertilizer by every test, in the scientist's laboratory or the practical test in the farmer's fields. It is the safe, sure, balanced food for your crops.

Natural Chilean contains almost two score of major and minor elements such as boron, magnesium, manganese, iodine, calcium, potassium, etc—each a vital element in growth and healthy development of plants.

*Natural*  
**CHILEAN NITRATE**  
**OF SODA**

WITH VITAL IMPURITIES IN NATURE'S OWN BALANCE AND BLEND

## Grapefruit Juice Does Not Compete With Orange Juice

Grapefruit juice can be sold in greatly increased quantities through soda fountains without lessening the demand for orange juice, W. L. Story, Winter Garden member, told the Florida Citrus Commission in reporting on a recent demonstration of citrus juice sales in New Haven, Conn.

Forty-three New Haven fountains, only three of which had served grapefruit juice before, did a profitable business on it in a special three-day test campaign supported by newspaper advertising featuring the health values of this fruit, said Mr. Story. He declared that a substantial proration of Florida's grapefruit crop can be marketed in this way.

Juice extractors now used in northern soda fountains will handle Florida fruit without serious difficulty, Mr. Story reported. He said there was no need for the citrus industry to develop an extractor especially designed to handle the large oranges and grapefruit of this state.

L. W. Marvin, sales promotion director, reported that one of the great benefits in the advertising of Florida fruit this season was in its effect on the trade. Wholesale and retail dealers have received with enthusiasm this evidence of Florida's determination to meet the competition of other citrus producing states, he said, and they have cooperated wholeheartedly in featuring the fruit of this state.

The most pressing problems confronting Florida growers in marketing their crops were described by Mr. Marvin as inequality in freight rates between eastern and middle western states, the increasing competition of other citrus areas and other food products, and uncertainties in the supply of Florida fruit. He told of steps which will overcome these obstacles and win the confidence of both the consuming public and the trade in Florida fruit.

Secretary F. E. Brigham reported on plans for research activities to develop new information on the comparative food and health values of Florida grapefruit, oranges and tangerines.

IF suffering with Piles, I want to help you. Drop me a line explaining.

Fred C. Whitney

317 6th Ave., Des Moines, Iowa

## CLASSIFIED Advertisements

The rate for advertisements of this nature is only five cents per word for each insertion. You may count the number of words you have, multiply it by five, and you will have the cost of the advertisement for one insertion. Multiply this by the total number of insertions desired and you will have the total cost. This rate is so low that we cannot charge classified accounts, and would, therefore, appreciate a remittance with order. No advertisement accepted for less than 25 cents.

**2 YR. FIELD GROWN ROSE BUSHES:** Red, Pink, Shell, Salmon, White Radiance, Hollande, Columbia, Briarcliff, Sunburst, Pres. Hoover, Victoria, Talisman, Sensation. All 19c each, postpaid. Ship C.O.D. **NAUGHTON FARMS,** Waxahachie, Texas.

**CAUSERIENCE LEPIDOFLOIA** — (So-called Brazilian oak), resembles Australian pine. Grand for windbreaks. Cold resistant. Beautiful. Send for sample of foliage. \$6.00 per 100. S. F. Matthews, Homestead, Fla.

**ALYCE CLOVER**, the best legume for hay or covercrop. Write for information. Hardin Groves, Box 63, Lakeland, Fla.

**FOR SALE** — 80 acres good citrus land, two miles northwest of Cocoa, Brevard County, Florida. Price \$1600.00 cash. S. Hendry, City Point, Florida.

**FILMS DEVELOPED** 2 prints of each 25c; 20 reprints 25c. Pine Photo, Y-5134 Nevada, Chicago.

**THRIFTY TREES** and budwood from record performance Perrine Lemon parents, Persian Lime and other citrus varieties. DeSoto Nurseries, DeSoto City, Fla.

**CROTALARIA** — New crop, high quality, double cleaned, scarified Crotalaria Striata seed for sale. Attractive prices. Carolinas' Crotalaria Co., Camden, S. C.

**UP to \$20.00 paid for Indian Head Cents; Half Cents \$125.00; Large Copper Cents \$500.00, etc.** Send dime for list. Roman-coinshop, D. Springfield, Mass.

**Large citrus trees for replanting at special low price.** Grafted avocado trees and budwood of Perrine lemon and Tahiti limes.

**WARD'S NURSERY**  
Avon Park, Fla.

**MEN WANTED**—Sell Shirts. No experience necessary. Free samples. Commission in advance. Free ties with shirts. Carroll Mills, 875A Flatbush Av., Brooklyn N. Y.

**HARDIN'S SPERRYOLA** Lemon, a profitable adapted commercial variety for all sections. Hardy, prolific grower and producer. Limited number choice trees. Hardin Nurseries, Box 63, Lakeland, Fla.

**WANTED** — Man with from ten thousand to twenty thousand dollars to grow an entirely new orange for the U. S. markets. Cheap lands, no cold, plenty water, no fertilizer. A world beater in an orange. Patented.—Address, Buen Negocio, Gaveta -1, Holguin, Cuba.

### PERSONAL

**QUIT TOBACCO** easily, inexpensively, without drugs. Send address. N. A. Stokes, Mohawk, Florida.

**FOR SALE**—Orlando (Lake) Tangelo buds. A new, improved citrus fruit—matures in October. Price 80c each. L. E. Jefferies, P. O. Box 92, Bradenton, Fla.

**WANTED**—To hear from owner of land for sale. O. Hawley, Baldwin, Wis.

**FREE Booklet** describes 87 plans for making \$20-\$100 weekly, home or office, business your own. Elite Service, 505 Fifth ave., New York City.

**CLEOPATRA MANDARIN** and Sour Orange root stock. Also Hamlin, Valencia and Persian Lime budded trees. Grand Island Nurseries, Eustis, Fla.

**WANTED**—To hear from owner having good farm for sale. Cash price, particulars. John Black, Chippewa Falls, Wisconsin.

**PUREBRED PULLETS FOR SALE**—White Leghorns and Anconas ready to ship. Barred Rocks and R. I. Reds shortly. Several hundred yearling White Leghorn hens now laying 70%. Write or wire for prices. C. A. Norman, Dr. 1440, Knoxville, Tenn.

**LAREDO SOY BEANS**, considered free from nematode, excellent for hay and soil improvement. Write the Baldwin County Seed Growers Association, Loxley, Alabama, for prices.

**FANCY ABAKKA** pineapple plants. R. A. Saeger, Ankona, Florida.

**FOR SALE**—Selected budwood and trees of Perrine lemon, Tahiti lime, new varieties tangelos and other citrus. Ward's Nursery, Avon Park, Fla.

**SCENIC HIGHWAY NURSERIES** has a large stock of early and late grapefruit and oranges. One, two and three year buds. This nursery has been operated since 1883 by G. H. Gibbons, Waverly, Fla.

**NEW COMMERCIAL lemon for Florida**, the Perrine; proven. All residents need yard trees, keeping Florida money at home. Booking orders for budded stock for winter delivery. DeSoto Nurseries, DeSoto City, Fla.

**SATSUMA BUDWOOD** from Bearing Trees. Hills Fruit Farm, Panama City, Fla.

**SEED**—Rough lemon, sour orange, cleopatra. New crop from type true parent trees. Also thrifty seedlings. DeSoto Nurseries, DeSoto City, Florida.

**BUDDED trees** new Florida commercial lemon, proven, thin skinned, juicy, scab immune. Also rough lemon, sour orange and Cleopatra seed and liningout seedlings. DeSoto Nurseries, DeSoto City, Fla.

**SEEDS**—ROUGH LEMON, SOUR ORANGE, CLEOPATRA. Pure, fresh, good germination. Also seedlings lineout size. DeSoto Nurseries, DeSoto City, Fla.

**CROTALARIA SPECTABILIS**—Seed for sale. New crop, well cured, bright and clean. Price 25c per pound in 100 pound lots and over, 80c per pound in less quantities. f. o. b. Hastings, Bunnell, Lowell and San Antonio, Florida. F. M. LEONARD & COMPANY, Hastings, Florida.

**WANTED**—Position as packing house foreman; in citrus business twenty-five years; ten years' experience as foreman; married man. J. E. Henry, Okahumpka, Florida.

July, 1936

THE CITRUS INDUSTRY

FREE PUBLIC LIBRARY  
JACKSONVILLE, FLORIDA  
Three

## Research Laboratory Opened At Dunedin

The Florida Citrus Research Laboratory is being opened this week to serve as a center to extend research on the processing of citrus fruits and the development of citrus by-products.

The enterprise is being established and supported by Mr. B. C. Skinner, who for more than a quarter of a century has been identified with the development of labor saving equipment for the economical handling of citrus fruit in volume in the modern packing house.

The laboratory staff is being made up of chemists and plant physiologists who have been prominent for years in the fruit industry. Director in charge will be Dr. Rodney B. Harvey, for sixteen years Professor of Plant physiology, Agricultural Botany and Horticulture at the University of Minnesota, and a recognized authority on plant physiology. He is a graduate of Purdue, Michigan and Chicago Universities and a Guggenheim Fellow of Cambridge and Bonn Universities and is now President of the American Society of Plant Physiologists. In addition he is author of several college text books and is a regular contributor and consultant in magazines dealing with plant physiology and horticulture.

Dr. Harvey is the inventor of the process of ripening fruits by the use of ethylene gas. This process is now commonly used in citrus packing houses as well as for other fruits. Within recent years Dr. Harvey invented a process whereby artificial color is applied to citrus fruit and which was commercially used in Florida for the first time last season With remarkable success. Under the trade name of "Color Added" probably 95% of all Florida oranges shipped last season were made more attractive by the use of a harmless food dye developed by Dr. Harvey.

Dr. Longfield Smith is another member of the laboratory staff, an outstanding figure in the field of plant chemistry. He has long been engaged in research work for the British and Danish governments and the United States Department of Agriculture. For a number of years he has been working in the state laboratory at Winter Haven.

Associated with these two distinguished chemists is Mr. J. J. R. Bristow, a chemical engineer, who has been developing new processes for

citrus juices and citrus oils. He has recently perfected new methods for canning citrus juices and concentrates as well as a number of processing inventions.

The Florida Citrus Research Laboratory will conduct research work and develop processes in the mechanism of fruit ripening, the conditions influencing their keeping qualities, their flavor, color and vitamin content.

It is the intention that the Florida Citrus Research Laboratory shall

cooperated and collaborate with existing agencies working along similar lines as well as with growers, packers and shippers, to the end that the industry as a whole may benefit.

There is room for greatly improved methods in the handling of fresh citrus fruit, particularly from the standpoint of obtaining a better color and a more attractive finish; no one so far has developed a satisfactory method of canning orange juice and the by-products field offers many opportunities for development.

In the belief that these problems can be worked out Mr. Skinner has engaged these experienced men, set up the necessary equipment for their use and given them free rein to go ahead.

## Summer Oil Sprays For Citrus Fruits

*Spraying & Dusting Citrus Fruits*

BY W. L. THOMPSON

ASSISTANT ENTOMOLOGIST CITRUS EXPERIMENT  
STATION

Many growers who used either copper or zinc sprays on their citrus groves during the spring have overlooked the importance of scale control at this time of year, and in many groves the scale, both purple and Florida red, have increased to the danger point. A careful check of the grove should be made at this time of year and if numerous scale are found an oil spray should be applied. A large proportion of the purple scale are now in the stages when they can be easily killed with oil sprays and spraying should be done in the very near future if an oil is necessary; a little later the oil will be less efficient and possibly interfere with coloring of fruit in the fall.

Oil sprays should not be used too soon after the application of sulphur as severe burning may result and a sulphur spray likewise should not be applied too soon after an oil application. The exact period that will have to elapse will be determined by the amount of sulphur on the trees and this in turn is determined largely by the amount of rainfall. Be sure to play safe in this regard.

Oil sprays cannot be depended on for rust mite control and sulphur must be used. An examination of a large number of groves shows that rust mites are present in many groves in numbers sufficient to cause russet-

ing of the fruit. If an oil spray is not necessary for scale control in those groves lime-sulphur, 1 1/4 to 100, plus 5 pounds of wettable sulphur should be used at once.

### CASH RECEIPTS GAIN IN ALL FARM REGIONS

Cash receipts from sales of principal farm products were greater this January than last in all agricultural regions, according to the Bureau of Agricultural Economics of the U. S. Department of Agriculture. Receipts from crops were 19 percent higher than in January a year ago. Receipts from livestock and livestock products were 25 percent higher.

January sales totaled \$516,346,000 compared with \$421,156,000 in January 1935, with \$374,434,000 in January 1934, and with \$306,055,000 in January 1933. Farmers received in addition this January \$1,199,000 in government rental and benefit payments, compared with \$70,275,000 in January last year.

The largest increases are reported in West North Central and South Atlantic states; the smallest in South Central States.



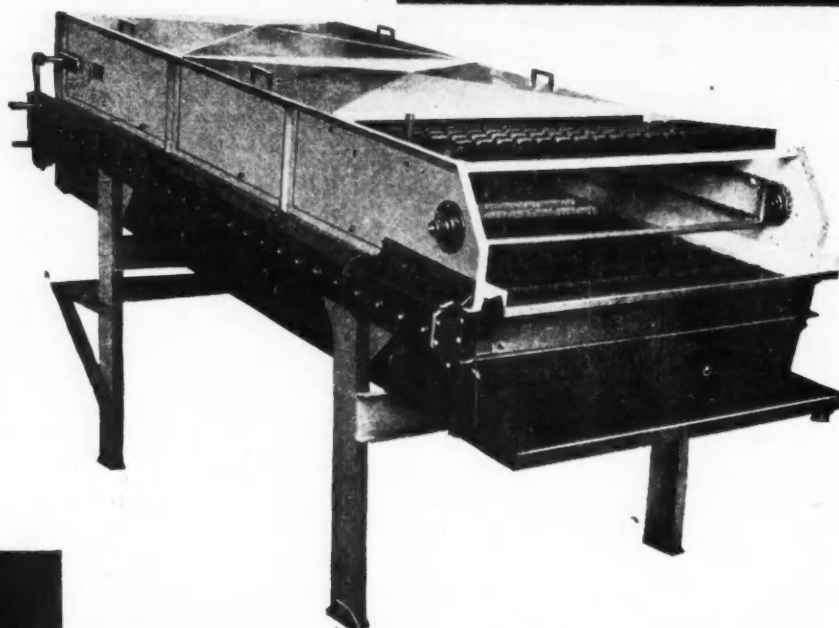
# Start with CLEANER FRUIT



*for* A BETTER  
QUALITY PACK

## "Gentle Wash Method"

sends cleaner, brighter fruit on its way to grading belt and packers. Warm water and emulsifier loosen the dirt embedded in natural oils of the fruit, just as warm water and soap removes grease from the hands. Thorough rinsing completes the FMC "Gentle Wash Method" that makes fruit look so much cleaner and brighter.



## New TRANSVERSE BRUSH WASHER

For any type of modern packing house equipment . . . built and serviced right here in Florida . . . get in touch with us. Write or ask to have an engineer call.

MANY outstanding improvements have been made in the dependable FMC Transverse Brush Washer to assure cleaner fruit and quiet and trouble-free operation.

The washer is equipped with removable covers. It has a non-clog flood spray system that delivers warm water and emulsifier to the fruit as it reaches the first sets of brushes. Brushes are of the finest quality, with coarse fibre graded out, and fruit revolves continuously until it reaches the delivery end of the washer, where a clean, cold rinse completes the "Gentle Wash Method."

The silent chain drive is totally enclosed, running in a bath of oil. Idle ends of brushes are equipped with double-sealed grease-packed ball bearings which require no lubrication.

Little floor space is needed for this New Transverse Brush washer. Frame is of heavy channel steel. Get complete information.

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